CLAIMS

1. A latex composed of an aqueous dispersion comprising at least 55% by weight of polymer particles distributed in the following way:

A - from 5 to 30% by weight have a mean diameter (dA) of between 100 and 250 nm,

B - from 70 to 95% by weight have a mean diameter (dB) of greater than 500 nm,

C - from 0 to 5% by weight have a mean diameter of between 250 and 500 nm,

D - from 0 to 5% by weight have a mean diameter of less than 100 nm,

dA/dB being between 3 and 10 and preferably greater than 4.

2. A latex as claimed in claim 1, characterized in that A represents from 10 to 25% and that B represents from 75 to 90% by weight of the particles.

3. A process for the preparation of a latex by the emulsion polymerization at a temperature of between 30 and 90°C of at least one ethylenically unsaturated monomer in the presence of at least one surfactant and of a seed of polymer particles with a diameter of between 200 and 450 nm representing from 5 to 25% by weight of the total weight of monomer and seed, the polymerization being initiated by a mixed water-soluble/fat-soluble system.

4. The process as claimed in claim 3, characterized in that the seed is introduced before the beginning of the polymerization.

5. The process as claimed in claim 3, characterized in that the seed is introduced after the beginning of the polymerization and before achieving 80% conversion of the monomers to be polymerized.

6. The process as claimed in one of claims 3 to 5, characterized in that the seed is introduced in the form of a latex.

7. The process as claimed in one of claims 3 to 5, characterized in that the seed is introduced in the form of a redispersible powder.

8. The process as claimed in claim 3, characterized in that the seed is prepared in situ by emulsion polymerization.

9. The process as claimed in any one of claims 3 to 8, characterized in that the seed is composed essentially of (meth)acrylic polymers.

10. The process as claimed in any one of claims 3 to 9, characterized in that the surfactant is chosen from

- anionic surfactants, such as alkylaryl ether sulfate or alkyl ether sulfates,
- nonionic surfactants, such as ethoxylated alkylphenol or ethoxylated fatty alcohols.

11. The process as claimed in any one of claims 3 to 10, characterized in that the mixed system is composed of a molar ratio of the water-soluble initiator to the fat-soluble initiator of between 0.01/1 and 1/0.01.

12. The process as claimed in any one of claims 3 to 11, characterized in that the water-soluble initiator is chosen from

sodium, potassium and ammonium persulfates,

water-soluble azo derivatives, such as 4,4'-azobis(4-cyanovaleric acid) or 2,2'-azobis(2-amidinopropane) dihydrochloride, for example.

The systems involving a reducing agent, an oxidizing agent and sometimes even an activating agent. The oxidizing agents are generally

hydroperoxides, such as aqueous hydrogen peroxide solution, tert-butyl hydroperoxide, tert-amyl hydroperoxide, cumyl hydroperoxide or the sodium salt of the mixture of m- and p-diisopropylbenzene dihydroperoxide. The most commonly employed reducing agents are sodium formaldehydesulfoxylate, sodium metabisulfite or ascorbic acid. Activating agents are generally metal salts, such as iron sulfate, copper sulfate or cobalt acetate.

13. The process as claimed in any one of claims 3 to 12, characterized in that the fat-soluble initiator is chosen from peroxides and hydroperoxides which are insoluble in water, peroxyesters, peroxydicarbonates or fat-soluble azo derivatives, such as azobisisobutyronitrile, azobiisobutyrodimethyl ester or azobiisobutyrodiethyl ester.

14. A use of the latices capable of being obtained according to the process of claims 3 to 13 in adhesive applications, such as pressure-sensitive adhesives used to stick on labels or floor covering adhesives.